IN THE CLAIMS

Please amend the claims and add new claims 4 to 20 as follows:

1. (currently amended) A synthetic quartz glass optical material **adapted to be** used **with a higher harmonic** [~~for the~~] YAG laser with [the] a third or higher order of harmonic [~~, and especially, a synthetic quartz glass optical material for the YAG laser with higher harmonic~~] **said material comprising synthetic quartz glass having an** [~~characterized by~~] OH group concentration in a [~~the~~] range of [~~≥1 to ≤300ppm~~] **1 to 300 ppm**, a contained hydrogen molecule concentration in [~~the~~] a range of [~~≥2×10^{18} to ≤2×10^{19}~~] **2×10^{18} to 2×10^{19}** molecules/cm^3, a transmittance of ultraviolet rays **having a wavelength of** [~~at~~] 245 nm of [~~wavelength with~~] 99.9% or more, [~~and~~] a fictive temperature in the range of [≥] 880 to [≤] 990°C.

2. (currently amended) A synthetic quartz glass optical material [~~for the YAG laser with higher harmonic~~] as claimed in Claim 1, [~~characterized in that~~] **wherein said synthetic quartz glass has a** chlorine concentration contained **therein** [~~in the aforesaid synthetic quartz glass optical material is~~] **of** 20 ppm or less.

3. (currently amended) A synthetic quartz glass optical material [~~for the YAG laser with higher harmonic~~] as claimed in Claim 1, [~~characterized in that~~] **wherein** the aforesaid higher harmonic of **the** YAG laser is the third, fourth or fifth order.

4. (new) A synthetic quartz glass optical material as claimed in Claim 2, wherein the aforesaid higher harmonic of the YAG laser is the third, fourth or fifth order.

5. (new) A synthetic quartz glass optical material as claimed in Claim 1, wherein the YAG laser has an order of harmonic that is higher than the third order.

6. (new) A synthetic quartz glass optical material as claimed in Claim 2, wherein the YAG laser has an order of harmonic that is higher than the third order.

7. (new) A synthetic quartz glass optical material as claimed in Claim 1, wherein the OH group concentration is in a range of 5 to 50 ppm.

8. (new) A synthetic quartz glass optical material as claimed in Claim 1, wherein the hydrogen molecule concentration is in a range of 4×10^{18} to 8×10^{18} molecules/cm^3.

9. (new) A synthetic quartz glass optical material as claimed in Claim 1, wherein the synthetic quartz glass has a damage threshold value of 17 J/cm^3 or higher when irradiated by a single pulse of a duration of 3 to 5 nanoseconds from a third-order harmonic YAG laser.

10. (new) A synthetic quartz glass optical material as claimed in Claim 1, wherein the synthetic quartz glass has a damage threshold value of 7 J/cm^3 or higher when irradiated by a single pulse of a duration of 3 to 5 nanoseconds from a fourth-order harmonic YAG laser.

11. (new) A synthetic quartz glass optical material as claimed in Claim 1, wherein the synthetic quartz glass has a damage threshold value of 11 J/cm^3 or higher when irradiated by 12,000 pulses each of a duration of 3 to 5 nanoseconds from a third-order harmonic YAG laser.

12. (new) A synthetic quartz glass optical material as claimed in Claim 1, wherein the synthetic quartz glass has a damage threshold value of 2.5 J/cm^3 or higher when irradiated by 12,000 pulses each of a duration of 3 to 5 nanoseconds from a fourth-order harmonic YAG laser.

13. (new) A process for use of an optical part with a laser, said process comprising:

providing said optical part, said optical part being formed of a synthetic quartz glass optical material comprising synthetic quartz glass having an OH group concentration in a range of 1 to 300 ppm, a contained hydrogen molecule concentration in a range of 2×10^{18} to 2×10^{19} molecules/cm^3, a transmittance of 99.9% or more of ultraviolet rays having a wavelength of 245 nm, and a fictive temperature in the range of 880 to 990°C; and

irradiating said optical part with said laser, said laser being a higher harmonic YAG laser with a third or higher order of harmonic.

10. (new) The process of claim 9, wherein said synthetic quartz glass has a chlorine concentration contained therein of 20 ppm or less.

14. (new) The process according to claim 13, wherein the OH group concentration is in a range of 5 to 50 ppm.

15. (new) The process according to claim 13, wherein the hydrogen molecule concentration is in a range of 4×10^{18} to 8×10^{18} molecules/cm^3.

16. (new) The process of claim 13, wherein the higher harmonic of the YAG laser is the third, fourth or fifth order.

17. (new) The process of claim 13, wherein the YAG laser has an order of harmonic that is higher than the third order.

18. (new) The process of claim 13, wherein said irradiating comprises irradiating the optical part with pulses, said pulses having a pulse width of 3 picoseconds to 5 nanoseconds and an oscillation frequency of 10 to 20 Hz.

19. (new) The process of claim 18, wherein the higher harmonic of the YAG laser is the third order and said YAG laser has an energy density of 11 J/cm^3 or lower.

20. (new) The process of claim 18, wherein the higher harmonic of the YAG laser is the fourth order and said YAG laser has an energy density of 2.5 J/cm^3 or lower.